

Exercise 1

Let h be a function defined by $h(x) = 5 \tan(x)$. Which of the following definitions of f and g satisfy $\left(\frac{f}{g}\right)(x) = h(x)$?

Multiple Choice:

- (a) $f(x) = 5 \sin(x)$ and $g(x) = 5 \cos(x)$
- (b) $f(x) = \sin(x)$ and $g(x) = \cos(x)$
- (c) $f(x) = \sin(x)$ and $g(x) = \frac{\cos(x)}{5}$ ✓
- (d) $f(x) = 5 \sin(x)$ and $g(x) = \frac{1}{5 \cos(x)}$

Let h be a function defined by $h(x) = 2 \tan(x)$. Which of the following definitions of f and g satisfy $(f \cdot g)(x) = h(x)$?

Multiple Choice:

- (a) $f(x) = \tan(x)$ and $g(x) = 2 \cos(x)$
- (b) $f(x) = 2 \sin(x)$ and $g(x) = \frac{1}{\cos(x)}$ ✓
- (c) $f(x) = \cos(x)$ and $g(x) = 2 \sin(x)$
- (d) $f(x) = \frac{2}{\sin(x)}$ and $g(x) = \cos(x)$

Let h be a function defined by $h(x) = \sin(x) \tan(x)$. Which of the following definitions of f and g satisfy $(f \cdot g)(x) = h(x)$?

Multiple Choice:

- (a) $f(x) = (\sin(x))^2$ and $g(x) = \cos(x)$
- (b) $f(x) = \sin(x)$ and $g(x) = \frac{1}{\cos(x)}$
- (c) $f(x) = (\sin(x))^2$ and $g(x) = \frac{1}{\cos(x)}$ ✓
- (d) $f(x) = \cos(x)$ and $g(x) = \left(\frac{1}{\sin(x)}\right)^2$